

## SEQUENCE LISTING

<110> NAKASHIMA, NOBUTAKA  
TAMURA, TOMOHIRO

<120> METHOD OF PRODUCING RECOMBINANT PROTEIN IN BACTERIUM  
BELONGING TO GENUS RHODOCOCCUS

<130> 081356-0253

<140> 10/553,979

<141> 2005-10-20

<150> PCT/JP04/005585

<151> 2004-04-19

<150> JP 2003116280

<151> 2003-04-21

<160> 168

<170> PatentIn Ver. 3.3

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primer sHN120

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primer sHN131

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primer sHN43

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primer sHN57

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 primer sHN141

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 primer sHN142

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primer sHN152

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primer T3

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22

<210> 35

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<212> DNA

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primer sHN155

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<210> 36

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<212> DNA

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primer sHN156

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<210> 37

<211> 67

<212> DNA

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primer sHN110

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gcctcct 67

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primer NNco1

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 tagatctcga ggatgaa 77

<210> 39  
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 tgatggtgat ggtggcc 77

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 ccatcactga a 71

<210> 41  
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 cgtagaattc c 71

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 primer sHN159

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<210> 43  
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 primer NNde1

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 primer CNde2

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 cgtagaattc cca 73

<210> 47  
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 primer sHN160

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 primer sHN343

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 primer sHN335

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 primer sHN336

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 primer sHN349

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 cagcatgaac gtgatgagga atgtcagaag 30

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 primer sHN351

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 primer sHN361

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<223> Description of Artificial Sequence: Synthetic  
primer sHN362

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primer sHN363

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primer sHN364

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primer sHN368

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 primer sHN373

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 <223> Description of Artificial Sequence: Synthetic  
 primer MCS-1a

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 primer MCS-1b

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 primer MCS-2a

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primer MCS-2b

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<212> DNA

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<223> Description of Artificial Sequence: Synthetic  
primer sHN217

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<212> DNA

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<223> Description of Artificial Sequence: Synthetic  
primer sHN218

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<223> Description of Artificial Sequence: Synthetic  
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 primer sHN398

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 primer sHN147

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 primer sHN376

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<223> Description of Artificial Sequence: Synthetic  
primer sHN388

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primer sHN120

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<223> Description of Artificial Sequence: Synthetic  
primer sHN160

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<210> 86  
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<223> Description of Artificial Sequence: Synthetic  
primer sHN337

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<210> 87  
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<223> Description of Artificial Sequence: Synthetic  
primer SHN338

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&lt;210&gt; 88

&lt;211&gt; 20

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<223> Description of Artificial Sequence: Synthetic  
primer SHN339

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&lt;211&gt; 55

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
primer SHN340

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55

&lt;210&gt; 90

&lt;211&gt; 5987

&lt;212&gt; DNA

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&lt;220&gt;

&lt;223&gt; endogenous plasmid pRE8424

&lt;400&gt; 90

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<223> Description of Artificial Sequence: Synthetic  
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<210> 93

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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
vector pTip-RT1 sequence

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&lt;211&gt; 8279

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
vector pTip-RT2 sequence

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<223> Description of Artificial Sequence: Synthetic  
vector pTip-RC1 sequence

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<213> Artificial Sequence

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vector pNit-QT1 sequence

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&lt;210&gt; 101

&lt;211&gt; 6058

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

<223> Description of Artificial Sequence: Synthetic  
vector pNit-RT1 sequence

&lt;400&gt; 101

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<210> 102

<211> 6062

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
vector pNit-RT2 sequence

<400> 102

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<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
vector pNit-QC1 sequence

<400> 103

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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic  
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<400> 104

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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
vector pNit-RC1 sequence

<400> 105

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<210> 106

<211> 6231

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
vector pNit-RC2 sequence

<400> 106

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<210> 107  
<211> 124  
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<213> Rhodococcus erythropolis

<220>  
<223> mutated TipA gene promoter

<400> 107  
cgcccggtt gagggagccg acggcacgcg gcggctcacg gcgtggcacg cggaacgtcc 60  
gggcttgac ctcacgtcac gtgaggaggt ataatggacg gcgtcagaga aggggacggc 120  
catg 124

<210> 108  
<211> 422  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
nucleotide sequence

<220>  
<221> CDS  
<222> (151)..(222)

<400> 108  
gtgtacatat cgaggcgggc tcccacggcc gcccggtg agggagccga cggcacgcgg 60  
cggtcacgg cgtggcacgc ggaacgtccg ggcttgacc tcacgtcacg tgaggaggca 120  
gcgtggacgg cgtcagagaa gggagcggcc atg ggc cac cat cac cat cac cat 174  
Met Gly His His His His His  
1 5

atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct cga gga 222  
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg Gly  
10 15 20

tgaactagtc gaccacccgg caccgtgag cccctcgtg cgggtgccgg tgcgagggac 282  
tgcaacacgc gaaacctgca caaacacacg gaggttgaa tgagcgccac ggacacaccc 342  
gataccggcg ccgttcacc ccggttggtg accaccgctg gggcggctga cctgctacgc 402  
cgctcagcg ggactctagt 422

<210> 109  
<211> 24  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 109

Met Gly His His His His His His Met Gly Ile Leu Arg Ser Gly Arg  
 1 5 10 15

Gly Ser Lys Leu Arg Ser Arg Gly  
 20

&lt;210&gt; 110

&lt;211&gt; 42

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic nucleotide sequence

&lt;400&gt; 110

gtctagaaat aattttgttt aactttaaga aggagatata cc 42

&lt;210&gt; 111

&lt;211&gt; 416

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic nucleotide sequence

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (151)..(216)

&lt;400&gt; 111

gtgtacatat cgaggcgggc tcccacggcc gcccgggctg agggagccga cggcacgcgg 60

cggctcacgg cgtggcacgc ggaacgtccg ggcttgacc tcacgtcacg tgaggaggca 120

gcgtggacgg cgtcagagaa gggagcggcc atg gga att cta cgt agc ggc cgc 174

Met Gly Ile Leu Arg Ser Gly Arg  
 1 5

gga tcc aag ctt aga tct cga gga cat cac cat cac cat cac 216

Gly Ser Lys Leu Arg Ser Arg Gly His His His His His His  
 10 15 20

tgaactagtc gacccaccgg caccctgag cccctcgctg cgggtgccgg tgcgaggac 276

tgcaacacgc gaaacctgca caaacacacg gaggttgga tgagcgccac ggacacaccc 336

gataccggcg ccgttccacc ccggttggtg accaccgctg gggcggtga cctgctacgc 396

cgcctcagcg ggactctagt 416



<210> 112  
 <211> 22  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 112  
 Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg Gly  
           1                  5                  10                  15  
 His His His His His His  
                           20

<210> 113  
 <211> 42  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

<400> 113  
 gtctagaaat aattttgttt aactttaaga aggagatata cc 42

<210> 114  
 <211> 425  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

<220>  
 <221> CDS  
 <222> (151)..(225)

<400> 114  
 gtgtacatat cgaggcgggc tcccacggcc gcccgggctg agggagccga cggcacgcgg 60  
 cggctcacgg cgtggcacgc ggaacgtccg ggcttgcacc tcacgtcacg tgaggaggca 120  
 gcgtggacgg cgtcagagaa gggagcgcac atg ggc cat cac cat cac cat cac 174  
                                   Met Gly His His His His His His  
                                   1                  5  
 gcc atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct cga 222  
 Ala Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg  
           10                  15                  20

gga tgaactagtc gacccaccgg caccctgag ccctcgctg cgggtgccgg 275  
 Gly  
 25

tgcgagggac tgcaacacgc gaaacctgca caaacacacg gaggttgaa tgagcgccac 335  
 ggacacaccc gataccggcg ccgttcacc ccggttggtg accaccgctg gggcggctga 395  
 cctgctacgc cgcctcagcg ggactctagt 425

<210> 115  
 <211> 25  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 115  
 Met Gly His His His His His His Ala Met Gly Ile Leu Arg Ser Gly  
 1 5 10 15  
 Arg Gly Ser Lys Leu Arg Ser Arg Gly  
 20 25

<210> 116  
 <211> 43  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

<400> 116  
 gtctagaaat aattttgttt aactttaaga aggagatata cat 43

<210> 117  
 <211> 416  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

<220>  
 <221> CDS  
 <222> (151)..(216)

<400> 117  
 gtgtacatat cgaggcgggc tccacggcc gcccgggctg agggagccga cggcacgcgg 60  
 cggctcacgg cgtggcacgc ggaacgtccg ggcttgacc tcacgtcacg tgaggaggca 120

gcgtggacgg cgtcagagaa gggagcgcat atg gga att cta cgt agc ggc cgc 174  
 Met Gly Ile Leu Arg Ser Gly Arg  
 1 5

gga tcc aag ctt aga tct cga gga cat cac cat cac cat cac 216  
 Gly Ser Lys Leu Arg Ser Arg Gly His His His His His His  
 10 15 20

tgaactagtc gacccaccgg caccctgag cccctcgctg cgggtgccgg tgcgagggac 276

tgcaacacgc gaaacctgca caaacacacg gaggttgga tgagcgccac ggacacaccc 336

gataccggcg ccgttcacc ccggttggtg accaccgctg gggcggctga cctgctacgc 396

cgctcagcg ggactctagt 416

<210> 118

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 118

Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Arg Gly  
 1 5 10 15

His His His His His His  
 20

<210> 119

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

<400> 119

gtctagaaat aattttgttt aactttaaga aggagatata cat 43

<210> 120

<211> 81

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (3)..(68)

&lt;400&gt; 120

```
cc atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct ctc 47
  Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu
    1           5           10          15
```

```
gag cat cac cat cac cat cac tgaactagtc gac 81
Glu His His His His His His
          20
```

&lt;210&gt; 121

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 121

```
Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu Glu
  1           5           10          15
```

```
His His His His His His
          20
```

&lt;210&gt; 122

&lt;211&gt; 82

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic nucleotide sequence

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (4)..(69)

&lt;400&gt; 122

```
cat atg gga att cta cgt agc ggc cgc gga tcc aag ctt aga tct ctc 48
  Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu
    1           5           10          15
```

```
gag cat cac cat cac cat cac tgaactagtc gac 82
Glu His His His His His His
          20
```

&lt;210&gt; 123

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 123

Met Gly Ile Leu Arg Ser Gly Arg Gly Ser Lys Leu Arg Ser Leu Glu  
 1 5 10 15

His His His His His His  
 20

&lt;210&gt; 124

&lt;211&gt; 22

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic nucleotide sequence

&lt;400&gt; 124

gtcagagaag ggagcggcca tg

22

&lt;210&gt; 125

&lt;211&gt; 45

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic nucleotide sequence

&lt;400&gt; 125

gtctagaaat aattttgttt aactttaaga aggagatata ccatg

45

&lt;210&gt; 126

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Rhodococcus erythropolis

&lt;400&gt; 126

Gly'Leu Arg Ser Cys Gly Lys Gly Trp Ile Cys Pro Cys Cys  
 1 5 10

&lt;210&gt; 127

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Rhodococcus erythropolis

&lt;400&gt; 127

Met Val Thr Met Thr Met Arg His  
 1 5

<210> 128  
 <211> 26  
 <212> PRT  
 <213> *Rhodococcus erythropolis*

<400> 128  
 Gly Cys Asp Gly Tyr Val Arg Ala Val Glu Ile Thr His Gly Lys Asn  
   1                  5                  10                  15  
 Gly Trp His Val His Val His Ala Leu Leu  
                   20                  25

<210> 129  
 <211> 10  
 <212> PRT  
 <213> *Rhodococcus erythropolis*

<400> 129  
 Leu Ala Ala Tyr Leu Thr Lys Ile Ala Ser  
   1                  5                  10

<210> 130  
 <211> 21  
 <212> PRT  
 <213> *Rhodococcus erythropolis*

<400> 130  
 Trp Arg Glu Phe Glu Phe Gly Ser Met Gly Arg Arg Ala Ile Ala Trp  
   1                  5                  10                  15  
 Ser Arg Gly Leu Arg  
                   20

<210> 131  
 <211> 14  
 <212> PRT  
 <213> *Arcanobacterium pyrogens*

<400> 131  
 Gly Leu His Thr Cys Gly Ser Val Trp Ala Cys Pro Val Cys  
   1                  5                  10

<210> 132  
 <211> 8  
 <212> PRT  
 <213> *Arcanobacterium pyrogens*

<400> 132  
 Met Leu Thr Leu Thr Gln Arg His  
   1                  5

<210> 133

<211> 26

<212> PRT

<213> Arcanobacterium pyrogens

<400> 133

Gly Leu Val Gly Tyr Val Arg Ala Asn Glu Ile Thr His Gly Lys His  
1 5 10 15

Gly Trp His Val His Ser His Val Leu Ile  
20 25

<210> 134

<211> 10

<212> PRT

<213> Arcanobacterium pyrogens

<400> 134

Ile Gly Asn Tyr Val Ser Lys Met Gln Thr  
1 5 10

<210> 135

<211> 21

<212> PRT

<213> Arcanobacterium pyrogens

<400> 135

Trp Lys Glu Tyr Glu Lys Ala Ser Phe Gly Arg Arg Ala Leu Thr Trp  
1 5 10 15

Ser Lys Gly Leu Arg  
20

<210> 136

<211> 8

<212> PRT

<213> Brevibacterium lactofermentum

<400> 136

Met Phe Val Gly Thr Val Arg His  
1 5

<210> 137

<211> 26

<212> PRT

<213> Brevibacterium lactofermentum

<400> 137

Val Glu His Thr Tyr Ser Asp Tyr Glu Val Thr Asp Ser Trp Ala Asn  
1 5 10 15

Gly Trp His Leu His Arg Asn Met Leu Leu  
20 25

<210> 138  
 <211> 10  
 <212> PRT  
 <213> Brevibacterium lactofermentium

<400> 138  
 Met Ala Thr Tyr Leu Ala Lys Gly Met Ser  
           1                  5                  10

<210> 139  
 <211> 20  
 <212> PRT  
 <213> Brevibacterium lactofermentium

<400> 139  
 Trp Arg Glu Tyr Glu Val Gly Ser Lys Asn Leu Arg Ser Ser Trp Ser  
           1                  5                  10                  15

Arg Gly Ala Lys  
                   20

<210> 140  
 <211> 14  
 <212> PRT  
 <213> Streptomyces phaeochromogenes

<400> 140  
 Gly Leu Val Arg Cys Gly Arg Ile Trp Phe Cys Pro Glu Cys  
           1                  5                  10

<210> 141  
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 <212> PRT  
 <213> Streptomyces phaeochromogenes

<400> 141  
 Leu Val Thr Phe Thr Ala Arg His  
           1                  5

<210> 142  
 <211> 27  
 <212> PRT  
 <213> Streptomyces phaeochromogenes

<400> 142  
 Gly Tyr Ile Gly Met Val Arg Ala Ala Glu Val Thr Arg Ser Lys Lys  
           1                  5                  10                  15

Asn Gly Tyr His Pro His Leu Asn Leu Leu Val  
                   20                  25



<210> 143  
 <211> 10  
 <212> PRT  
 <213> Streptomyces phaeochromogenes

<400> 143  
 Leu Ile Glu Tyr Leu Thr Lys Asn Gln Asp  
           1                  5                  10

<210> 144  
 <211> 21  
 <212> PRT  
 <213> Streptomyces phaeochromogenes

<400> 144  
 Trp Ala Gln Tyr Glu Glu Ala Leu Ala Gly Arg Arg Ala Ile Glu Trp  
           1                  5                  10                  15

Thr Arg Gly Leu Arg  
                   20

<210> 145  
 <211> 14  
 <212> PRT  
 <213> Streptomyces lividans

<400> 145  
 Gly Leu Met Arg Cys Gly Arg Ile Trp Leu Cys Pro Val Cys  
           1                  5                  10

<210> 146  
 <211> 8  
 <212> PRT  
 <213> Streptomyces lividans

<400> 146  
 Leu Val Thr Phe Thr Ala Arg His  
           1                  5

<210> 147  
 <211> 26  
 <212> PRT  
 <213> Streptomyces lividans

<400> 147  
 Gly Tyr Val Gly Met Arg Ala Thr Glu Val Thr Val Gly Gln Ile Asn  
           1                  5                  10                  15

Gly Trp His Pro His Ile His Ala Ile Val  
                   20                  25

<210> 148  
 <211> 10  
 <212> PRT  
 <213> Streptomyces lividans

<400> 148  
 Leu Ala Glu Tyr Ile Ala Lys Thr Gln Asp  
   1                  5                 10

<210> 149  
 <211> 21  
 <212> PRT  
 <213> Streptomyces lividans

<400> 149  
 Trp His Glu Tyr Glu Arg Ala Thr Arg Gly Arg Arg Ala Ile Glu Trp  
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Thr Arg Tyr Leu Arg  
                   20

<210> 150  
 <211> 14  
 <212> PRT  
 <213> Streptomyces nigrifaciens

<400> 150  
 Gly Leu Met Arg Cys Gly Arg Ile Trp Leu Cys Pro Val Cys  
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<210> 151  
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 <212> PRT  
 <213> Streptomyces nigrifaciens

<400> 151  
 Leu Val Thr Phe Thr Ala Arg His  
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<210> 152  
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 <212> PRT  
 <213> Streptomyces nigrifaciens

<400> 152  
 Gly Tyr Val Gly Met Arg Ala Thr Glu Val Thr Val Gly Gln Ile Asn  
   1                  5                 10                 15

Gly Trp His Pro His Ile His Ala Ile Val  
                   20                 25

<210> 153  
 <211> 10  
 <212> PRT  
 <213> Streptomyces nigrifaciens

<400> 153  
 Leu Ala Glu Tyr Ile Ala Lys Thr Gln Asp  
       1                  5                  10

<210> 154  
 <211> 21  
 <212> PRT  
 <213> Streptomyces nigrifaciens

<400> 154  
 Trp His Glu Tyr Glu Arg Ala Thr Lys Gly Arg Arg Ala Ile Glu Trp  
       1                  5                  10                  15  
 Thr Arg Tyr Leu Arg  
                   20

<210> 155  
 <211> 30  
 <212> DNA  
 <213> Rhodococcus erythropolis

<400> 155  
 cgagcgaagc ggagcgcgta ggtgggggag 30

<210> 156  
 <211> 27  
 <212> DNA  
 <213> Arcanobacterium pyrogens

<400> 156  
 caggtatgcg gaaaacttta ggaacaa 27

<210> 157  
 <211> 32  
 <212> DNA  
 <213> Brevibacterium lactofermentum

<400> 157  
 gaaatagaag tgaacacctc taaggaaccg ca 32

<210> 158  
 <211> 31  
 <212> DNA  
 <213> Streptomyces phaeochromogenes

<400> 158  
 ctggcaaaaaa gggacgccta ggtaaagggt t 31

<210> 159  
 <211> 30  
 <212> DNA  
 <213> *Streptomyces lividans*

<400> 159  
 gaggcacaaag cgaacacctt gggaaagaaa 30

<210> 160  
 <211> 32  
 <212> DNA  
 <213> *Streptomyces nigrifaciens*

<400> 160  
 gacccaaaac gtgtcgcgcc ttgggaaaga aa 32

<210> 161  
 <211> 270  
 <212> DNA  
 <213> *Rhodococcus erythropolis*

<400> 161  
 tgagggcatc cccccgatac ttgccgcttt gaagctgggt gtctctctgt cagggctgcg 60  
 atagcaccgc gtacgggctt ggccttgaca gagagacggc ctgtttcatg gttggtctcg 120  
 gggggctgac cgggcagata gaaaaaggcc ggccgatttg gctgccgact atttttgcag 180  
 gtaaaccat ctcagagca tcaatgaacg tcccgttgta tcgcagcgcg tgcagcttcg 240  
 gtagacgtcg atggcgttgt gatgggtgtg 270

<210> 162  
 <211> 170  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

<400> 162  
 tgtacatatac gaggcgggct cccacggccg cccgggctga gggagccgac ggcacgcggc 60  
 ggctcacggc gtggcacgcg gaacgtccgg gcttgacact cacgtcacgt gaggaggcag 120  
 cgtggacggc gtctagaaat aattttgttt aactttaaga agaagatata 170

<210> 163  
 <211> 95  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 nucleotide sequence

<220>  
 <221> CDS  
 <222> (3) .. (92)

<400> 163

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cc atg ggc cac cat cac cat cac cat atg gga att cta cgt agc ggc 47
  Met Gly His His His His His His Met Gly Ile Leu Arg Ser Gly
    1             5             10             15

cgc gga tcc aag ctt aga tct ctc gag cat cac cat cac cat cac tga 95
Arg Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His
    20             25             30
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<210> 164  
 <211> 30  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 164

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Met Gly His His His His His His Met Gly Ile Leu Arg Ser Gly Arg
  1             5             10             15

Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His
    20             25             30
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<210> 165  
 <211> 99  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic nucleotide sequence

<220>  
 <221> CDS  
 <222> (4) .. (96)

<400> 165

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cat atg ggc cat cac cat cac cat cac gcc atg gga att cta cgt agc 48
  Met Gly His His His His His His Ala Met Gly Ile Leu Arg Ser
    1             5             10             15

ggc cgc gga tcc aag ctt aga tct ctc gag cat cac cat cac cat cac 96
Gly Arg Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His
    20             25             30

tga 99
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<210> 166  
 <211> 31  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic peptide

<400> 166  
 Met Gly His His His His His Ala Met Gly Ile Leu Arg Ser Gly  
 1 5 10 15  
 Arg Gly Ser Lys Leu Arg Ser Leu Glu His His His His His His  
 20 25 30

<210> 167  
 <211> 197  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic nucleotide sequence

<400> 167  
 actagtcgac ccaccggcac ccgtgagccc ctgctgctggtg gtagccggtgc gagggactgc 60  
 aacacgcgaa acctgcacaa acacacggag gttggaatga gcgccacgga cacacccgat 120  
 accggcgccg ttccaccccg gttggtgacc accgctgggg cggtgacct gctacgcgcg 180  
 ctcagcggga ctctagt 197

<210> 168  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic 6xHis tag

<400> 168  
 His His His His His His  
 1 5